IMPROVED COATED WEIGHT PLATES, DUMBBELLS AND METHOD OF MANUFACTURE

THIS APPLICATION CLAIMS PRIORITY TO PROVISIONAL PATENT APPLICATION SERIAL NO. 60/449,886, FILED ON FEBRUARY 25, 2003.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to the field of weights and dumbbells. The invention especially relates to decoration and advertising placed upon a weight plate and the addition of an at least partially clear coating to the weight.

2. Description of Related Art

In the prior art, logos were placed on dumbbells in a variety of expensive ways. Logos or advertising could not be placed on the weights as decals, since the decals would be abused by the use of the exercise equipment. Also, the decals would not stick to a preferred polyurethane coating. In addition, if a manufacturer wanted to color the weight heads, or paint them, the coloring would be dirtied, faded or torn by the use of the weights.

SUMMARY OF THE INVENTION

In standard practice in the industry, the dumbbell is created with a thin coating of black polyurethane on the weight plates. Next, a logo is applied. Because of the "wax-paper" surface characteristics of polyurethane, it is difficult to place decals, silk-screening, paint or similar materials on the surface of the weight plates. Thus, a logo

could only be placed on a weight head by having the logo in the mold or by having it machined or engraved on the plate.

It is known to inject or fill a void with white or colored urethane to form letters on a weight plate. However, in using this process, it is important to remove all mold release from the voids after each use. Otherwise, the colored letters will not adhere to the black urethane. Alternatively, a weight plate may be machined so that a logo is in a void. Then a different color urethane is injected or filled into the void to form a logo.

Also, in the industry it is known to simply machine a logo directly into the weight plate using one or more steps of machining for each color of urethane. This method is extremely expensive and time consuming. Furthermore, it is limiting in the amount of detail which may be included in a logo. Furthermore, it would be extremely difficult to apply the logo on the inside face of a weight plate on a dumbbell.

In addition, colored dumbbells with a polyurethane surface in the prior art are prohibitively expensive. Each time a colored dumbbell is desired a manufacturer would have to purge its injection machines and insert the desired colors, consuming valuable manufacturing time.

It is the object of the present invention to make it possible to have detailed, colorful logos on weight plates and dumbbells.

It is a further object of this invention to allow the inexpensive production of colored dumbbells.

It is a further object of this invention to make colored dumbbells with a protective coating.

It is a further objective of this invention to have weight plates and dumbbells with decals that are permanently affixed, protected and visible.

In accordance with these and other objectives which will be apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings. The drawings constitute a part of this specification and include exemplary embodiments of the present invention and illustrate various objects and features thereof.

DESCRIPTION OF THE FIGURES

Fig. 1 is a cut away perspective view of the preferred embodiment of the invention.

Fig. 1a is a cut away perspective view of the preferred embodiment having a dark colored weight plate.

Fig. 2 is a perspective view of a prior art invention.

Fig. 3 is a perspective view of a prior art invention and a typical prior art logo for the prior art invention.

Fig. 4 is a perspective view of alternative embodiments of the invention next to a prior art invention.

Fig. 5 is a perspective view of an alternative embodiment of the invention.

Fig. 6 is a perspective view of an alternative embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION.

The present invention is a clear coating on a weight on a dumbbell, a dumbbell having weights having a clear coating, and the process for coating a weight on a

dumbbell with a clear coating. The invention includes the painting or other coloration of the weights on a dumbbell before placing the clear coating on the dumbbell. Also, the invention includes the use of decals on the weight before the clear coating is placed on the dumbbell. In addition, the invention is a method of advertising on a weight plate.

In the preferred embodiment, a dumbbell of the preferred embodiment is shown in Figures 1 and 1a at 10. The weight plate 12 is provided, and may be colored in a preferred hue. The coloring is preferred to be a powder coat or paint but may be some other agent known in the art. The paint is preferably sprayed onto the plate 12. Optionally, the plate may be covered with a clear paint. In an alternative embodiment, a design or logo is painted onto the weight plate itself. The weight plate is preferred to be metal which has been forged, cast or machined. However, other manufacturing methods and appropriate materials may be used as is known in the art. Also, it is preferred that the weight is in a generally round shape as shown in Figures 1-6. A weight plate 12 is placed on either end of a handle 14. The handle may be of any useful shape and texture, but the Tri-Bar handle used by TKO Sports, Inc. is preferred. The handle is preferably welded to the weight plates. However, it may also be threaded, pinned or press fit to the plates 12, or attached in other methods known in the art.

Then, if desired, one or more decals 16 are placed on the weight plate. It is preferred that the decals are on the far end 18 of the plate 12 so it can be viewed easily. However, as shown in Figures 1 and 1a, decals 16 may also be placed on the inside surface 20 or on the perimeter 22 of the weight plate 12. The decals are preferred to be of a vinyl material, but any other generally heat resistant material may also be used. Also, it is preferred that the decal material keeps the colors on the decal from running.

The weight plates 12 are then covered with a clear coating 24. The coating protects the weight plate 12 and allows the decals 16 to be seen. Also, if the weight plate is colored, or if there is a painted design on the weight plate it may be seen through the clear coating. While it is preferred that the coating is clear; however, the coating may be translucent and colored if desired. It may also be preferred to include a UV protection chemical element into the polyurethane.

The coating is preferred to be polyurethane, such as that manufactured by Anderson Development Company, Inc., Uniroyal or Airproducts. The polyurethane is preferably placed on the weight plate using a low-pressure polyurethane dispensing machine, such as one produced by Ureflex-Baule. The urethane may alternatively be placed on the weight plates using an injection molding system, using a mold that does not use an injection system, or using a spray method directly spraying the coating onto the weight plates. In using a mold system wherein the polyurethane is poured directly into a mold containing the weight plate to be covered, it is preferred that the polyurethane is poured at a temperature of approximately 150-200 degrees Fahrenheit. Equivalent polyurethane may be used which cures at a lower temperature such as room temperature. Either weight plates 12 may be covered simultaneously, or each plate 12 may be covered individually.

In one embodiment a weight plate is covered with polyurethane before the handle is attached. The weight plate 12 has a threaded internal bore and a threaded plug member having threads which extend beyond the threading within the plate 12 is placed within the bore. The polyurethane is then poured over the weight plate 12 and at least a portion of the plug member. When the polyurethane has cooled, the plug is

removed, and threading is left within the polyurethane extending above the threading within the bore of the weight plate. a threaded handle is then placed through the threading in the polyurethane and preferably through the threading in the weight plate. However, other equivalent methods of molding the polyurethane onto the weights before the handle is attached are known in the art.

Figure 2 reveals a prior art dumbbell 26 without clear coating. The text written on the weight plates may be marred by normal use. Furthermore, if the weights were merely painted, the plates could be marked, or the colors could rub off onto surfaces in the gymnasium.

Figure 3 reveals an expensive design 28 painted on a dumbbell of the prior art 26. Each color of the design 28 was placed on the weight plate 26 using a separate step. However, using the current invention, the design may be placed on a decal. The decal process is much less expensive; and more highly detailed designs may be placed on the decal. After it is covered with polyurethane, the decal may be seen through the protective coating.

Figure 4 illustrates three dumbbells, including one prior art dumbbell 26 and one dumbbell embodying the present invention 10. As shown, the painting applied to the weight plate 12 as well as decals 16 can bee seen clearly through the polyurethane coating.

Figures 5 and 6 reveal the finished product of the present invention. As shown, the clear coating improves the ability to design or decorate a weight plate whether it is a traditional dark color 30 or a bright color 32 underneath.

Alternatively, the steps for creating a dumbbell pursuant to the present invention are as follows. First the handle is selected. The handle is preferred to be steel, and may be knurled, flats, chromed, black oxide, or be of any other useful shape or finish known in the art. Next, the dumbbell head is created. The head is preferred to be metal and manufactured as described above. Next, the head is prepared for coating. It can be powder coated or otherwise painted, chromed or sandblasted, with or without a clear finish. Other finished known in the art may also be used.

In the next step, a decal, if desired, is placed on the head. The decal can be of any desired image. The decal can be of any color or mix of colors, high resolution graphics or actual pictures. It may be preferred that the image is a computer image which is placed on a decal using known printing techniques. If needed, the decal is then cut before it is placed on the dumbbell head.

Next, clear polyurethane is applied to the weight with the decal as described above. If necessary, the polyurethane is then trimmed after the dumbbell is removed from the mold.

Thus, the number of steps and the labor needed to make a design on a weight plate is minimized. Furthermore, a dumbbell is now available having a high quality design which can be seen though a protective coating.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departure may be made therefrom within the scope of the invention and that obvious modifications will occur to a person skilled in the art.